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ABSTRACT

Metaphors and metaphor usage infuse everyday classroom life, and student learning becomes affected and structured by the metaphoric constructs that teachers wittingly or unwittingly employ. This study is an initial inquiry into the nature of teacher use of metaphors in the classroom. The study attempts to identify some specific teaching/learning metaphors that teachers and students use in their daily interactions with each other in regular classroom situations. The study also attempts to examine how and the extent to which these discernible, interactive teaching/learning metaphors might positively or negatively affect the perceived degree of environmental robustness in these classrooms and to determine how they affect the quality of teacher performance in the classrooms. This study utilized observational data collected over a 5-month period. The classroom-based performance of beginning and experienced teachers in 100 classrooms was assessed using the System for Teaching and Learning Assessment and Review (STAR). The findings suggest that teacher use of specific teaching/learning metaphors is tied to various levels of percentage scores on key STAR indicators measuring high student engagement in learning and that these teaching/learning metaphors are also correlated with resultant levels of classroom robustness. Appendixes include: characteristics of high and low robustness classes, selected key STAR indicators, examples of clustering of supportive field data for metaphors identified, and a bar graph of the teaching/learning empowerment continuum. (IAH)

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Student Learning, Teacher Use of Teaching/Learning Empowerment Metaphors and Classroom Robustness: An Initial Investigation

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at the meeting of the
American Educational Research Association
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Introduction

This study is grounded in the supposition that metaphors and metaphor usage infuse everyday classroom life. This fundamental premise about classrooms is reflective of the view presented by Lakoff & Johnson (1980) that "...our conceptual system is largely metaphorical...the way we think, what we experience, and what we do every day is very much a matter of metaphor". Classrooms are interactive arenas where students and teachers come together, and in which learning environments are continually created and reinforced. As classrooms are places in which students and teachers interact, student learning becomes affected and structured by the metaphoric constructs which teachers wittingly or unwittingly employ. A recent study by Tobin & Ulerick (1989) provides evidence that teaching behaviors are influenced by the metaphors teachers use to conceptualize their teaching. If metaphors do help to shape the nature of learning environments, then, as Munby & Russell (1989) suggest, "...it may be productive for all teachers to become students of metaphor, at least of their own metaphors".

Purpose of the Study

This research study represents an initial inquiry into the nature of teacher use of metaphors in classrooms. The study considers the proposition that it is possible to identify and consider some specific teaching/learning metaphors which teachers and students use in their daily interactions with each other in regular classroom situations in schools. The investigators in this study further attempt to examine how and the extent to which these discernible, interactive teaching/learning metaphors might positively or negatively affect the perceived degree of environmental robustness in these classrooms, and to further determine how they affect the quality of teacher performances in their classrooms. Specifically, the statement of the problem

is: Do the teaching/learning metaphors which this study seeks to demonstrate teachers subscribe to and utilize on a daily basis in classroom situations serve to promote the role empowerment of both teachers and students; and, can the utilization of these empowerment metaphors in classroom interactions between teachers and their students, in turn, be linked to environmental robustness, and ultimately, to effective teaching and learning at the classroom level?

Conceptual Framework of the Study

This study posits that there are certain definable and observable teaching and learning metaphors (construct #1 - teaching/learning metaphors) which teachers identify with and utilize as a means of focusing and structuring their professional roles in interactions with students. While the term 'metaphor' is, strictly speaking, a linguistic term, it is chosen for use in this study -- partly because of its connotation of implying a certain kind of richness and complexity of construct -- to refer to the broader concept of a mental 'frame of reference' or 'image' (of a particular mode of interaction or characteristic style of behavior) to which a teacher may relate and then outwardly project as he/she is engaged in normal daily classroom activities and interactions with students. Moreover, teachers' employment of these metaphors, as a mental pattern or referrant for the structuring of their actions, language and behavior, serves to elicit a typical, desired set of responses from students. These student responses, in turn, strengthen and reinforce the teaching/learning metaphors used.

Thus, it is suggested that teachers employ recognizable teaching/learning metaphors in their everyday interactions with students, and that these metaphors are discernible in teachers' verbal and non-verbal behaviors as they interact with students. The employment of certain teaching/learning metaphors by teachers during interactions with students may, in fact, lead to increased, observable teacher effectiveness and student learning.

A second idea guiding this study is the use of different metaphors by teachers in their dealings with students. These metaphors are believed to be related to the degree of

'empowerment' in teachers' and students' respective roles (construct #2 - levels of role empowerment). The term 'empowerment' is used here in the sense of enabling or allowing role fulfillment. The use of certain kinds of metaphors by teachers may promote increased feelings in teachers and students of being 'empowered' in their roles, while the use of certain other kinds of metaphors by teachers may, in fact, inhibit feelings of classroom role empowerment. In this study, a 'Teaching/Learning Empowerment Metaphor Continuum' (T/LEMC) is devised as a means of conceptualizing teachers' usage of metaphors in their everyday interactions with students.

The T/LEMC consists of teaching/learning metaphors which are considered to either inhibit or promote teacher and student performance in the classroom. On one end of the continuum are metaphors which serve to inhibit effective teacher and student performance. Metaphors falling towards this end of the continuum will be labeled 'transferential' as they are based on simply a 'transfer' of power from the teacher to students (or, from students to the teacher). These metaphors do not promote subsequent high levels of quality teacher/student performance in classroom teaching and learning situations. Thus, they fail to 'empower' teachers and students as they work toward productive levels of teaching/learning performance. On the other end of the continuum are metaphors which tend to promote high teacher effectiveness and student learning. Metaphors falling towards this end of the continuum are labeled 'transactional' since they are derived from ongoing, reciprocal interactions between teachers and students. These teaching/learning metaphors serve to promote active teacher and student involvement in creating and furthering quality teaching and learning environments in the classroom. These metaphors engender high quality efforts on the part of teachers and students.

Presumably, teachers employing metaphors of a very autocratic and dictatorial nature in their interactions with students (transferential metaphors) would stifle to a large extent any significant feelings of classroom role empowerment by students. These kinds of metaphors -- in which one of the agents in the empowering framework effectively gives over all their power (in others words, is 'depowered') by acquiescing to the other 'powerful' agent - in this case, the teacher -- are based on a transfer of power from one agent to another.

Alternatively, teachers that employ metaphors which are more open and 'trans-active' in their orientation (transactional metaphors) would consequently promote high levels of positive feelings of learner role empowerment. These kinds of metaphors are based more on the idea, not that power is 'given to' someone or 'transferred' from one agent to another, but that through collaborative teaching/learning leadership the power in **both** agents (teacher and students) is allowed to surface and expand -- power is transacted. Thus, with these kinds of metaphors both agents are allowed to develop and fulfill the empowerment potential in their respective classroom teaching and learning roles. Teaching/learning empowerment metaphors which, therefore, fall on this side of the continuum can be designated as 'transactional' teaching/learning empowerment metaphors[1].

A third idea guiding this study is that the different metaphors which teachers use influence subsequent levels of classroom environmental robustness (construct #3 - classroom environmental robustness). Thus, the notion of classroom robustness as defined by Willower & Licata (1975) is of interest in this study as it relates to the T/LEMC. As defined by Willower & Licata, classroom robustness can be thought of as the "high dramatic structure produced in a classroom by tension-creating structures" (Willower & Licata, 1975). Classroom environmental robustness can therefore be thought of as a wholistic measure of the 'participative life' or 'structural aliveness' evident in a classroom. Thus, in low-robust classroom environments the teacher and students view much of their respective participation in classroom activities as a 'chore'. These types of low-robust classroom environments also contain a high degree of teacher dominance, and low interaction levels between the teacher and students, High-robust classroom environments, on the other hand, are characterized by: (1) a high degree of spontaneous student involvement in various 'classroom learning tasks' which is related to fostering a quality classroom teaching and learning environment; (2) a complimentary high degree of student effort at maintaining high performance levels in their classrooms; (3) a reduced status differentiation between teachers and students promoting increased opportunities

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[1]See S.J. Maxcy & J. Claudet, 'Empowerment and Leadership in Educational Settings', A.E.R.A. paper presentation, San Francisco, 1989, for a discussion of the transactional vs. transferential nature of educational empowerment.

for 'cooperative' teaching and learning; and (4) a high interaction level between teacher and students. The 'Characteristics of High and Low Robustness Levels' conceptualized by Licata & Wildes (1980) (see Appendix I, p. 28) were applied in this study to classroom teacher/student interactive situations in an effort to help clarify the relationship between teachers' use of teaching/learning empowerment metaphors and classroom robustness.

By way of summary, three key questions guided this study:

1. Can teaching/learning metaphors be discerned through direct classroom observation that are distinctly associated with high and low levels of student engagement in learning?
2. What is the relationship between the metaphors discerned and known characteristics of classroom environmental robustness?
3. Can specific metaphors associated with high and low levels of student engagement in learning tasks be defined along an empowerment metaphor continuum varying from transferential to transactional metaphors?

Data Source

This study utilized observational data collected over a five-month period in the spring of 1989 as part of assessor trainee field practices associated with the Louisiana Teaching Internship Program (LTIP) and the Louisiana Teacher Evaluation Program (LTEP) pilot research & development project. These new teacher assessment programs are presently under contract for development by Louisiana State University in response to recent state-mandated legislation (the Louisiana Teaching Internship Act, 1984 (funded, 1988) and the Louisiana Children First Act, 1988). These programs require the development of a 'state of the art' model/instrument for the ongoing 'performance-based' assessment of beginning teachers' classroom skills for the purpose of professional induction and the evaluation of experienced teachers' classroom performance for the purpose of professional renewable certification.

During FY 1988-89, the Louisiana State University College of Education was contracted by the Louisiana Board of Elementary and Secondary Education (LBESE) to begin initial research, development and piloting of the Teaching Internship (LTIP) and Statewide Teacher Evaluation (LTEP) Programs. As a result of FY 1988-89 research efforts, a draft system for

assessing the classroom-based performance of beginning and experienced teachers was developed. This system is called the STAR (System for Teaching and Learning Assessment and Review) (Ellett, Loup & Chauvin, 1989) and it is used to train principals, master teachers, supervisors, college faculty and other educators to complete thorough assessments of both beginning and experienced teachers' classroom performances. The STAR model includes multiple scheduled classroom observations of the teacher as part of the assessment/evaluation process. A unique element of the STAR as an assessment/evaluation system is its focus on the assessment of both teaching performance and student learning. Assessments of teacher performance with the STAR are grounded in inferences that trained assessors make about the degree to which students are engaged in learning and the extent to which teaching and learning occur within a positive learning climate and interactive learning environment. A complete description of the conceptual basis of the STAR is beyond the scope of this paper. The interested reader is referred to Ellett (1990).

In the Spring (1989) of the first pilot year an eight-day comprehensive professional development program for the certification of STAR assessors was piloted. Approximately 350 Louisiana educators drawn from forty-four parishes and two independent school districts in Louisiana received indepth and uniform training in the proper use of the STAR assessment instrument and teacher observation process. As part of training participants received intensive practice in taking accurate, data-based observational notes which emphasize behaviors of both teachers and students in the classroom. This was done through involvement in practice observer simulations with videotaped lessons followed by diagnostic feedback to participants, as well as an actual field assessment activity.

During these Spring, 1989 assessor training sessions opportunities were provided for extensive field practice activities in order to give trainees 'hands-on' practice in utilizing the STAR instrument/process in actual classroom observational situations. These sets of trainee field observations (consisting of one thousand classroom observation notes and STAR assessments of teacher performance) were used in this study as a basis for the discernment of teaching metaphors and for profiling classroom robustness characteristics.

Methodology & Data Analysis

These one thousand completed STAR teacher observation/assessment recording forms were initially rank ordered according to overall student on-task engagement rates indicated on each teacher's assessment form. A specific item indicator on the STAR instrument calls for the assessor to arrive at an overall average percentage of student on-task engagement for the class based on multiple observer scans of the learning environment. From this initial rank ordering of the one thousand completed teacher assessment recording forms, two smaller groups of completed recording forms were then identified: (1) a subgroup of one hundred completed recording forms consisting of those teachers with the highest percentages of overall average student engagement rates; and (2) a subgroup of one hundred completed recording forms consisting of those teachers with the lowest percentages of overall average student engagement rates. As part of the identification process for these two subgroups, observational notes were initially examined, and those notes that were deemed completely unusable (due to overall poor quality of the fieldnotes) were eliminated from inclusion in the subgroups.

Next, in order to be able to study the possible relationship between overall average student engagement rates and individual performances by teachers on STAR assessments, the one hundred teachers within each subgroup were further rank ordered in terms of their relative percentage of positive scorings on fifty-two key STAR item indicators selected from the 140-item STAR instrument. These specific fifty-two indicators of teaching/learning performance were selected based on the perception by the researchers that positive performance scores by teachers on these indicators are essential for promoting and enhancing all students' high engagement in learning. These assessment indicators reference the teacher's ability to actively involve students in an ample number of opportunities throughout the lesson in the development of thinking skills, broaden students' understandings of the material and enhance students' active involvement in learning tasks. These fifty-two key STAR item indicators are listed in Appendix II, pp. 29-30.

Following these procedures, the individual observational notes associated with each of these two subgroups of assessment recording forms were scrutinized in order to determine their descriptive quality and usefulness in identifying teacher metaphors (Tables 1 & 2, pp. 17-20). Based on this analysis of observation notes, a final set of fifty completed teacher assessment recording forms and observational notes were selected for each of the subgroups (Tables 3 & 4, pp. 21-24).

A detailed descriptive analysis of the fieldnotes associated with each of these one hundred individual teachers comprising the final two subgroups was then undertaken. The purpose was to determine specific teaching/learning metaphors which might be utilized by teachers during the performance of their normal teaching activities and interactions with students in the classroom. Written observational data were isolated and then subjected to further analyses to determine specific metaphors which seemed to be repeatedly utilized by these one hundred teachers. For the purposes of this study, metaphors identified in each set of fieldnotes were given an intensity rating (varying on a Likert scale from 1 to 3) to signify the perceived level or intensity of usage in the lesson. The ratings were: 3 = significant occurrences of a metaphor in use throughout a lesson; 2 = some usage of the metaphor evident in the fieldnotes; 1 = minimal but recognizable usage of the metaphor during the lesson. From the analysis of the set of one hundred observer fieldnotes seven metaphors were identified. Examples of clustering of supportive field data for these specific metaphors discerned are given in Appendix III, pp. 31-37.

A comparative analysis was then conducted on the empowerment metaphors of the teachers in the high and low student engagement groups to determine if discernible differences in kinds of metaphors used by these two groups of teachers, in fact, existed (in terms of an empowerment metaphor continuum). These specific metaphors were analyzed in terms of their relative success in enhancing actual teaching and learning in the classroom (through reference to observer remarks/information contained in the fieldnotes on such things as teacher-student interaction levels, student interest in the lesson, quality of student response/lesson feedback, etc.). Based on this analysis, specific metaphors isolated in the study were grouped, ordered and placed on the 'Teaching/Learning Empowerment Metaphor Continuum' (Appendix IV). The

ordering of the metaphors identified (from most transferential to most transactional) is as follows: M1 - Taskmaster/Drill Sergeant; M2 - Manager/Organizer/Routinizer; M3 - Humorist; M4 - Supporter/Helper/Facilitator; M5 - Monitor/Prober/Assessor; M6 - Storyteller; and M7 - Challenger/Motivator.

Next, from this initial ordering of metaphors along the Empowerment Metaphor Continuum (M1 through M7), a 'Weighted Metaphor Index' was generated. For this index a weighted metaphor score for each teacher observed was computed based on metaphor data derived from each set of observer fieldnotes. An individual weighted metaphor score for each teacher observed was determined by multiplying the metaphor intensity ratings for each metaphor discerned by its metaphor order number and then adding these individual weighted scores together (in observations where two or more metaphors were used) to arrive at a total metaphor weighted index score for the observation. For example, if a teacher employed three different metaphors as noted in the fieldnotes, and it was determined that the intensity ratings for each metaphor discerned were -- M4 = 1, M5 = 3 & M7 = 2, then the teacher's weighted metaphor index score would be 33.

Classroom robustness levels for individual classrooms were determined through analysis of observers' fieldnotes for each class observed (Appendix III). The 'Characteristics of High & Low Classroom Robustness' of Licata & Wildes (1980) were used as a semantic guide in isolating descriptive observer comments and phrases from the fieldnotes that were supportive of high and low robustness levels. A Likert-type rating scale (varying from 1 to 5) was utilized as a means of designating an 'intensity rating' for each classroom observed based on the kind and quality of discernible notetaking evidence culled from each set of fieldnotes. The intensity ratings ranged as follows: 5 = strong examples in the fieldnotes of high robustness; 4 = good examples in fieldnotes of high robustness; 3 = some fair examples in fieldnotes of high robustness; 2 = good examples of low robustness; 1 = strong examples of low robustness. Some examples of kinds and quality of robustness levels discerned are included as part of the descriptive data clustering presented in Appendix III.

A correlational analysis was then undertaken to determine the relationships among particular teaching/learning empowerment metaphors used, overall average student engagement

rates, varying teacher percentage levels of key STAR indicators positively scored, weighted metaphor scores and classroom robustness levels.

Results

A cross-tabulation of the frequency (in percentages) of the 'intensity occurrence' of various metaphors discerned in the classroom observation notes is presented in Table 5 (p. 25). This information indicates that for the sample studied (n = 100 classrooms) the metaphors 'Humorist' and 'Storyteller', while surfacing in the dataset analysis, occurred relatively infrequently as discernible metaphors. In fact, the metaphor 'Storyteller' was clearly evident in only one set of fieldnotes. This finding more than likely served to reduce the correlation between this metaphor and the classroom indices. Means and standard deviations by subgroup for the remaining variables studied are presented in Table 6 (p. 26).

A summary of intercorrelations of variables studied is presented in Table 7 (p. 27). Weighted metaphor scores across the two subgroups were found to be highly correlated with overall student engagement rates (r = .77), STAR indicator scores (r = .72) and robustness levels (r = .85). Overall average class engagement rates were positively correlated with percentages of positive scorings on key STAR indicators (r = .68). Class engagement rates were also highly correlated with robustness levels (r = .81). Percentages of positive scorings on key STAR indicators were found to be highly correlated with robustness levels (r = .82).

The results in Table 7 also show differential relationships between various metaphors on the T/LEMC and classroom robustness, engagement rate and STAR key indicator scores. For example, metaphors at the transferential end of the T/LEMC are negatively correlated with these classroom environment indices (e.g., 'Taskmaster/Drill Sergeant' and 'Manager/Organizer/Routinizer'). At the transactional end of the T/LEMC, metaphor scores correlate positively with these classroom environment indices. The 'Humorist' and 'Storyteller' metaphors showed little or no relationship to the classroom environment indices. All the correlations in Table 7 were significant beyond the .001 level, except for the 'Humorist' and 'Storyteller' metaphors (p >.05).

Discussion

Findings emerging from the intercorrelations support initial speculation on the relationships among student engagement, teacher use of metaphors, positive scorings on key STAR performance indicators and environmental robustness. As student engagement in learning tasks has been shown to be a predictor of student achievement (Soar, 1973; Stallings & Kaskowitz, 1974; Solomon & Kendall, 1976), overall average engagement percentages for the sample were found to be positively correlated with percentages of positive scorings on key STAR indicators of effective teaching/learning ($r = .68$). Also, uniformly high intercorrelations among weighted metaphor scores, class engagement rates, percentages of positive scorings on key STAR indicators and robustness levels confirm a strong relationship among these variables. The results of the correlations seem to corroborate the fact that classroom robustness levels are strongly linked to student involvement in learning tasks. The high correlation between class engagement rates and robustness levels ($r = .81$) provides supportive evidence that, as Willower & Licata suggest, low robustness classrooms are those in which student brinkmanship, disinterest, momentary and persistent off-taskness are common and in which student misbehavior is a high risk activity. Likewise, the findings indicate that high robustness classrooms are those in which there is spontaneous student involvement in learning tasks and little student misbehavior.

The pattern of intercorrelations among the metaphors suggest that the metaphors fall differentially along the transferential/transactional continuum. These metaphors are significantly related to student engagement rates and classroom robustness levels. The metaphor continuum seems to be validated in classes with overall high engagement levels and overall high scores on key assessment indicators of the STAR. It appears that metaphors toward the transactional end of the continuum are much more strongly evident in classes where there are high levels of classroom robustness and high percentages of teacher scores on key learning indicators. Conversely, low robust classrooms seem to be ones where teachers engage in metaphors which are more transferential in nature, and which are reflected in lower percentages

of positive scorings on key STAR learning indicators.

From the analyses conducted on the observational notes in both the low and high engagement subgroups, and in view of the correlations found, evidence emerges which suggests that teachers often do not simply employ just one metaphor in their classrooms, but actually use several metaphors in combination in their interactions with students. As a teacher chooses certain metaphors, these metaphors evolve into the teacher's 'metaphor set' which the teacher feels comfortable with, and which the teacher and the students reinforce through repeated interactive use in the classroom. This set or 'ensemble' of metaphors then becomes reflective of the teacher's characteristic teaching/learning empowerment style. Teachers can be thought of as demonstrating a characteristically transferential or transactional empowerment style in their interactions with students depending upon from which end of the metaphor continuum their set of metaphors emerge. Teachers who consistently use groupings of metaphors towards the transferential end of the continuum can be seen to demonstrate a clearly transferential empowerment style. For example, teachers who are predominantly 'taskmasters', will often also be very 'managerial' in their actions and behaviors, and stress 'routinizing' classroom activities and 'organizing' students' learning tasks. Teachers, conversely, who are 'monitors' and 'assessors', and who are thus characteristically concerned with continuously probing during the lesson for student understanding of the material, are oftentimes seen as 'helping' students with their work and 'facilitating' their comprehension of the lesson. These teachers are also 'challenging' in the kinds of questions they ask of their students, and they seek to structure their questioning strategies, as well as their overall teaching methods and students' learning tasks in ways which are 'motivating' and purposeful for students.

Additionally, as teachers seem to develop and use a characteristic set of metaphors as part of their classroom interactive behavior, they may choose to employ certain metaphors which fall along the metaphor continuum *more* or *less* transactionally or transferentially. Since the metaphors discerned in this study fall on various places on a transferential/transactional continuum, these metaphors may have the capacity to engender various interactive effects depending on the way in which they are used and how they may be combined with other metaphors comprising the teacher's metaphor set. For example, the metaphor 'helper,

facilitator' used by a teacher who is very transferentially oriented may serve to simply reinforce a 'taskmaster, 'get things done', less robust atmosphere in the classroom, rather than creating a more open, livelier environment. On the other hand, the teacher who is more transactionally oriented may incorporate 'helping' and 'facilitating' into his/her interactive style in ways which enhance a decidedly transactional empowerment style. This flexibility in customizing and modifying metaphors to fit a teacher's transferential or transactional empowerment style is graphically depicted on the Teaching/Learning Empowerment Continuum (See Appendix IV) by way of varying degrees of shading for each metaphor across the continuum.

Conclusions

This paper presents an investigation of metaphor constructs that teachers may use in their interactions with students. The study is somewhat unique in that the metaphors identified and studied were grounded in an observational dataset generated in one thousand classroom assessments of teaching and learning. It is important to note that this study is exploratory and that the findings reported are viewed as tentative. However, analyses of metaphors discerned from observer notes in this study do indicate that results of studies such as this one may provide researchers with additional insights into the kinds and complexities of metaphor constructs which teachers actually use in their daily efforts to create positive, quality learning environments in their classrooms. Analyses of this type serve to elucidate the nature of an 'ensemble' of metaphors use on a transferential/transactional 'empowerment continuum'. As robust classroom learning environments are places of 'high drama' and 'structural aliveness', the kinds and quality of 'participative life' or robustness of classrooms become important barometers of the relative success of different kinds of interactive metaphors in promoting and enhancing effective student learning. Thus, examining the ways in which teaching/learning metaphors are initiated and employed by teachers, as well as reinforced through interactions with students, provides a useful means of further understanding the complexities of learning environments and classroom life.

The findings for the 'Humorist' and 'Storyteller' metaphors suggest that as these metaphors were found to occur infrequently in the notes studied, they may not be strong metaphoric constructs that teachers use to enhance environmental robustness or student engagement in learning. Teacher behavior dominated by these metaphors may exist infrequently in classrooms. Thus, it may be that these metaphors are only effective in producing positive, learning oriented classroom environments when they are associated with other metaphors on the transactional end of the T/LEMC. If these metaphors are primary and dominate teaching style, they may serve to inhibit productive learning environments for students. A teacher who is exclusively a 'Humorist' or a 'Storyteller', for example, might frequently digress from topics and activities and waste valuable learning time.

The strong, positive relationships between the weighted metaphor index and STAR key indicator scores, class engagement rates and robustness is consistent with the conceptual basis of the STAR (Ellett, 1990). The metaphors of 'Supporter/Helper/Facilitator', 'Monitor/Prober/Assessor' and 'Challenger/Motivator', for example, reflect rather well the assessment philosophy and content of the STAR Performance Dimension IV, called 'Enhancement of Learning'.

The findings presented suggest that teacher use of specific teaching/learning metaphors, as defined on a teaching/learning metaphor continuum ranging from transferential to transactional, is tied to various levels of teacher percentage scores on key STAR indicators measuring high student engagement in learning, and that these teaching/learning metaphors are also correlated with resultant levels of classroom robustness. This study offers some preliminary evidence that observer fieldnotes can be a useful and valid resource for identfying metaphors, particularly when they come from multiple assessors over multiple occasions. This study was somewhat methodologically limited in that the same individual 'scored' classroom notes for both metaphors and robustness levels. This may have served to artificially inflate the metaphor/robustness correlations due to common method variance. However, the indices of engagement and STAR key indicators were based on the judgments of independent assessors. If this study is replicated, classroom observation notes should probably be scored by two or more researchers to document scoring agreement and to check on the possible effects of

common method variance. As part of a continuing program of metaphor studies utilizing related project datasets, the researchers intend in the future to incorporate independent judges into the metaphor and robustness analysis framework as a means of further validating these initial efforts.

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Table 1

Rank ordering of low engagement group (100) by percentage of positive scorings on 52 key STAR indicators.

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
1	518	....	10.1	0	0.0000
2	011	5845	50.4	1	1.9231
3	778	....	57.2	2	3.8462
4	150	1231	4.1	4	7.6923
5	629	1705	2.9	6	11.5385
6	754	9999	65.3	6	11.5385
7	506	2194	57.8	6	11.5385
8	449	2355	58.5	7	13.4615
9	076	3165	67.5	8	15.3846
10	358	5082	46.7	8	15.3846
11	709	7627	56.9	9	17.3077
12	343	2649	67.4	9	17.3077
13	523	....	3.6	10	19.2308
14	720	9999	56.6	10	19.2308
15	556	....	21.0	10	19.2308
16	517	....	12.4	11	21.1538
17	706	9999	68.6	11	21.1538
18	346	9547	14.9	11	21.1538
19	048	9999	56.2	12	23.0769
20	761	4778	70.8	12	23.0769
21	293	....	28.2	13	25.0000
22	714	9999	25.9	13	25.0000
23	560	....	17.2	13	25.0000
24	363	....	6.4	14	26.9231
25	075	5690	72.0	14	26.9231
26	584	....	12.7	15	28.8462
27	023	5499	5.6	15	28.8462
28	176	9999	56.5	15	28.8462
29	206	8323	71.9	15	28.8462
30	732	8828	61.2	17	32.6923
31	416	....	2.8	17	32.6923
32	555	....	5.6	17	32.6923
33	245	3308	22.4	17	32.6923
34	741	9999	41.0	17	32.6923
35	175	9999	53.5	17	32.6923
36	220	....	33.0	17	32.6923
37	009	8083	71.6	17	32.6923
38	607	....	19.4	17	32.6923
39	500	2997	68.6	18	34.6154
40	081	5058	71.0	18	34.6154
41	606	....	24.2	18	34.6154
42	897	0280	73.5	20	38.4615
43	718	9999	7.1	20	38.4615
44	348	9802	16.6	20	38.4615
45	010	5296	34.4	21	40.3846
46	167	2509	59.9	21	40.3846
47	045	9999	62.1	22	42.3077

Table 1 (cont'd)

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
48	705	9999	71.4	22	42.3077
49	328	2498	2.8	23	44.2308
50	344	6610	63.5	23	44.2308
51	608	....	17.3	23	44.2308
52	685	9065	62.2	23	44.2308
53	364	....	12.5	24	46.1538
54	362	5167	14.9	24	46.1538
55	330	9455	2.6	24	46.1538
56	022	9800	4.2	24	46.1538
57	278	....	3.0	24	46.1538
58	273	7908	3.2	25	48.0769
59	277	1754	3.2	25	48.0769
60	457	3769	2.7	25	48.0769
61	044	3602	21.5	25	48.0769
62	551	....	3.7	26	50.0000
63	459	3680	2.6	26	50.0000
64	224	....	72.8	26	50.0000
65	282	....	3.0	26	50.0000
66	552	....	5.0	26	50.0000
67	420	....	3.4	26	50.0000
68	183	2275	44.1	26	50.0000
69	452	4678	22.5	27	51.9231
70	731	4464	65.2	28	53.8462
71	365	....	20.1	28	53.8462
72	079	4217	69.9	28	53.8462
73	180	2823	55.6	28	53.8462
74	520	....	3.0	29	55.7692
75	516	....	17.7	29	55.7692
76	143	7490	72.1	30	57.6923
77	609	....	6.7	31	59.6154
78	323	5479	12.0	31	59.6154
79	205	....	55.0	31	59.6154
80	203	6927	59.2	31	59.6154
81	557	....	8.8	32	61.5385
82	956	1795	67.0	32	61.5385
83	110	6951	3.0	32	61.5385
84	070	6737	62.2	32	61.5385
85	196	9999	2.3	33	63.4615
86	041	4719	40.8	33	63.4615
87	078	9999	48.4	33	63.4615
88	182	1720	55.0	33	63.4615
89	324	9038	17.9	33	63.4615
90	450	3689	9.5	33	63.4615
91	727	0665	17.3	33	70.2128
92	321	2727	16.8	34	65.3846
93	322	6528	17.8	34	65.3846
94	109	6134	3.1	34	65.3846
95	179	8652	60.8	34	65.3846
96	513	....	69.9	34	72.3404
97	268	4569	72.4	35	67.3077
98	320	1576	16.3	37	71.1538
99	257	1021	5.9	38	73.0769
100	349	7728	17.9	39	75.0000

Table 2

Rank ordering of high engagement group (100) by percentage of positive scorings on 52 key STAR indicators.

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
1	670	....	100.0	23	44.2308
2	031	6127	98.9	26	50.0000
3	893	5977	98.6	27	51.9231
4	672	....	100.0	28	53.8462
5	054	7873	100.0	28	53.8462
6	661	7485	98.7	28	53.8462
7	884	7735	99.8	29	55.7692
8	547	2945	98.9	30	57.6923
9	885	8917	98.6	30	57.6923
10	959	2120	98.9	30	57.6923
11	751	7609	100.0	30	57.6923
12	308	....	100.0	31	59.6154
13	043	7242	100.0	31	59.6154
14	544	....	100.0	33	63.4615
15	116	2922	100.0	33	63.4615
16	564	....	100.0	33	63.4615
17	812	6402	99.6	34	65.3846
18	941	....	99.5	35	67.3077
19	851	9759	99.7	35	67.3077
20	215	2063	100.0	35	67.3077
21	542	....	100.0	35	67.3077
22	811	8052	99.8	35	67.3077
23	029	4142	99.0	35	67.3077
24	005	7175	97.8	36	69.2308
25	828	....	98.0	36	69.2308
26	883	2126	99.7	36	69.2308
27	667	....	97.7	36	69.2308
28	886	3923	99,2	36	69.2308
29	604	....	99.8	37	71.1538
30	341	9679	99.1	37	71.1538
31	810	6918	99.4	37	71.1538
32	813	6004	99.1	37	71.1538
33	427	6815	98.0	37	71.1538
34	837	8372	98.8	37	71.1538
35	027	6114	98.7	37	71.1538
36	945	....	99.6	38	73.0769
37	882	4229	98.4	38	73.0769
38	309	....	99.3	38	73.0769
39	876	8270	100.0	38	73.0769
40	951	....	100.0	38	73.0769
41	942	....	99.8	39	75.0000
42	748	9260	98.0	39	75.0000
43	546	1065	98.4	39	75.0000
44	014	1945	99.2	39	75.0000
45	944	....	99.0	39	75.0000
46	924	....	97.9	39	75.0000
47	911	9707	97.7	39	75.0000

Table 2 (cont'd)

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
48	954	....	99.5	39	75.0000
49	115	1376	98.3	40	76.9231
50	823	....	98.6	40	76.9231
51	289	....	99.1	40	76.9231
52	602	...	100.0	40	76.9231
53	566	4566	98.8	40	76.9231
54	757	9999	97.6	40	76.9231
55	142	4371	97.8	40	76.9231
56	139	9438	99.6	41	78.8462
57	055	3696	97.3	41	78.8462
58	814	5810	98.8	42	80.7692
59	666	....	98.2	42	80.7692
60	877	....	100.0	42	80.7692
61	625	7528	99.8	42	80.7692
62	771	....	99.5	42	80.7692
63	692	0677	100.0	43	82.6923
64	681	....	97.4	43	82.6923
65	809	....	97.6	43	82.6923
66	896	8397	100.0	43	82.6923
67	575	3301	100.0	43	82.6923
68	826	....	99.5	43	82.6923
69	541	....	98.7	43	82.6923
70	149	8255	99.9	44	84.6154
71	671	....	99.4	44	84.6154
72	786	2695	100.0	45	86.5385
73	819	0084	97.4	45	86.5385
74	821	2114	99.1	46	86.4615
75	655	2801	98.8	46	88.4615
76	818	2361	97.7	47	90.3846
77	658	4796	98.0	47	90.3846
78	970	0653	100.0	47	90.3846
79	138	3856	99.6	47	90.3846
80	056	9034	99.7	47	90.3846
81	906	6871	99.8	48	92.3077
82	669	....	98.3	48	92.3077
83	824	....	99.1	48	92.3077
84	471	3662	97.3	48	92.3077
85	568	4444	100.0	48	92.3077
86	820	6928	98.8	49	94.2038
87	969	8230	100.0	49	94.2038
88	875	8176	98.0	49	94.2038
89	736	2799	100.0	50	96.1538
90	543	....	99.8	50	96.1538
91	673	....	99.0	50	96.1538
92	338	0014	97.9	50	96.1538
93	253	5123	97.5	50	96.1538
94	307	....	98.5	50	96.1538
95	570	9336	100.0	50	96.1538
96	873	2604	100.0	51	98.0769
97	310	....	99.9	51	98.0769
98	474	6228	99.5	51	98.0769
99	850	7848	100.0	51	98.0769
100	861	1795	100.0	52	100.0000

Table 3

Final set of fifty observation notes selected in the low engagement subgroup.

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
1	518	....	10.1	0	0.0000
2	150	1231	4.1	4	7.6923
3	629	1705	2.9	6	11.5385
4	506	2194	57.8	6	11.5385
5	449	2355	58.5	7	13.4615
6	358	5082	46.7	8	15.3846
7	076	3165	67.5	8	15.3846
8	709	7627	56.9	9	17.3077
9	343	2649	67.4	9	17.3077
10	706	9999	68.6	11	21.1538
11	346	9547	14.9	11	21.1538
12	048	9999	56.2	12	23.0769
13	293	....	28.2	13	25.0000
14	363	....	6.4	14	26.9231
15	023	5499	5.6	15	28.8462
16	555	....	5.6	17	32.6923
17	245	3308	22.4	17	32.6923
18	732	8828	61.2	17	32.6923
19	220	....	33.0	17	32.6923
20	607	....	19.4	17	32.6923
21	606	....	24.2	18	34.6154
22	081	5058	71.0	18	34.6154
23	897	0280	73.5	20	38.4615
24	348	9802	16.6	20	38.4615
25	010	5296	34.4	21	40.3846
26	167	2509	59.9	21	40.3846
27	328	2498	2.8	23	44.2308
28	344	6610	63.5	23	44.2308
29	022	9800	4.2	24	46.1538
30	278	....	3.0	24	46.1538
31	364	....	12.5	24	46.1538
32	362	5167	14.9	24	46.1538
33	457	3769	2.7	25	48.0769
34	273	7908	3.2	25	48.0769
35	459	3680	2.6	26	50.0000
36	551	....	3.7	26	50.0000
37	224	....	72.8	26	50.0000
38	183	2275	44.1	26	50.0000
39	552	....	5.0	26	50.0000
40	452	4678	22.5	27	51.9231
41	143	7490	72.1	30	57.6923
42	323	5479	12.0	31	59.6151

Table 3 (cont'd)

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
43	205	....	55.0	31	59.6151
44	956	1795	67.0	32	61.5385
45	109	6134	3.1	34	65.3846
46	321	2727	16.8	34	65.3846
47	268	4569	72.4	35	67.3077
48	320	1576	16.3	37	71.1538
49	349	7728	17.9	39	75.0000
50	513	....	69.9	40	76.9231

Table 4

Final set of fifty observation notes selected in the high engagement subgroup.

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
1	054	7873	100.0	28	53.8462
2	564	....	100.0	33	63.4615
3	812	6402	99.6	34	65.3846
4	215	2063	100.0	35	67.3077
5	851	9759	99.7	35	67.3077
6	941	....	99.5	35	67.3077
7	029	4142	99.0	35	67.3077
8	811	8052	99.8	35	67.3077
9	828	....	98.0	36	69.2300
10	883	2126	99.7	36	69.2308
11	005	7175	97.8	36	69.2308
12	667	....	97.7	36	69.2308
13	886	3923	99.2	36	69.2308
14	604	....	99.8	37	71.1538
15	341	9679	99.1	37	71.1538
16	427	6815	98.0	37	71.1538
17	027	6114	98.7	37	71.1538
18	309	....	99.3	38	73.0769
19	911	9707	97.7	39	75.0000
20	014	1945	99.2	39	75.0000
21	944	....	99.0	39	75.0000
22	942	....	99.8	39	75.0000
23	289	....	99.1	40	76.9231
24	566	4566	98.8	40	76.9231
25	757	9999	97.6	40	76.9231
26	115	1376	98.3	40	76.9231
27	142	4371	97.8	40	76.9231
28	055	3696	97.3	41	78.8462
29	139	9438	99.6	41	78.8462
30	771	....	99.5	42	80.7692
31	814	5810	98.8	42	80.7692
32	681	....	97.4	43	82.6923
33	809	....	97.6	43	82.6923
34	896	8397	100.0	43	82.6923
35	149	8255	99.9	44	84.6154
36	819	0084	97.4	45	86.5385
37	655	2801	98.8	46	88.4615
38	658	4796	98.0	47	90.3846
39	970	0653	100.0	47	90.3846
40	138	3856	99.6	47	90.3846
41	824	....	99.1	48	92.3077
42	906	6871	99.8	48	92.3077

Table 4 (cont'd)

n	OBS	TID	STENG PERCENT	SCORE	PERCENT
43	669	....	98.3	48	92.3077
44	820	6928	98.8	49	94.2308
45	736	2799	100.0	50	96.1538
46	673	....	99.0	50	96.1538
47	253	5123	97.5	50	96.1538
48	873	2604	100.0	51	98.0769
49	310	....	99.9	51	98.0769
50	861	1795	100.0	52	100.0000

Table 5

Frequency (in percentages) of the 'Intensity Occurrence' of Various Metaphors in Classroom Observation Notes (n = 100 classrooms)

Metaphors	No Occurrence	Low Intensity	Mid Intensity	High Intensity
(M1)	54.0	6.0	16.0	24.0
(M2)	66.0	7.0	14.0	13.0
(M3)	86.0	12.0	0.0	2.0
(M4)	60.0	5.0	20.0	15.0
(M5)	49.0	1.0	12.0	38.0
(M6)	99.0	0.0	1.0	0.0
(M7)	83.0	2.0	11.0	4.0

Table 6

Means and Standard Deviations for Class Engagement Rate, Key STAR Indicator Percentages and Weighted Metaphor Index (by Subgroup)

High Subgroup

Variable	n	Mean	Standard Deviation
Class Engagement Rate	50	99.04	0.90
Positive Percentage of STAR Indicators	50	79.23	11.08
Weighted Metaphor Index	50	26.18	7.72

Low Subgroup

Variable	n	Mean	Standard Deviation
Class Engagement Rate	50	33.20	26.37
Positive Percentage of STAR Indicators	50	38.74	19.34
Weighted Metaphor Index	50	6.10	2.81

Table 7

Summary of Intercorrelations Among Class Engagement Rate, Percentage of Positive Scorings on Key STAR Indicators, Classroom Robustness, Weighted Metaphor Index and Individual Metaphor Scores

Metaphors	Class Engagement Rate	Percentage of Positive Scorings	Robustness Levels
(M1) Taskmaster/ Drill Sergeant	-0.76664	-0.78385	-0.87645
(M2) Manager/Organizer/ Routinizer	-0.57657	-0.56950	-0.62269
(M3) Humorist	0.10390*	-0.03714*	0.03548*
(M4) Supporter/Helper/ Facilitator	0.59312	0.47258	0.55993
(M5) Monitor/Prober/ Assessor	0.84674	0.79636	0.92584
(M6) Storyteller	0.09022*	0.09322*	0.08672*
(M7) Challenger/ Motivator	0.37881	0.48698	0.56340
Weighted Metaphor Index	0.76633	0.72264	0.85375
Class Engagement Rate		0.68423	0.81381
Percentage of Positive Scorings on Key Indicators			0.82077

*p > .05

APPENDIX I

CHARACTERISTICS OF HIGH AND LOW ROBUSTNESS CLASSES

High Robustness Classrooms	Low Robustness Classrooms
Spontaneous student involvement in task, task activity would probably continue in the absence of the teacher.	Student and teacher view much of task as a chore. It is doubtful that students would continue their work in the absence of the teacher.
The teacher seems to be a moving, dynamic focal point for the class.	The teacher establishes a stationary position or focal point in front of the class.
The classroom appears to be a place for meeting with friends and where peer relationships among students are as integral a part of classroom interaction as relationships with the teacher.	The teacher seems to dominate interaction in the class and there is very little opportunity for interaction among students.
Student leadership seems to emerge naturally from the student group resulting in reduced status differentiation between students and teacher.	Teacher dominance tends to stifle student leadership and reinforce status differentiation between student and teacher. Social distance between teacher and student is strictly enforced.
The class atmosphere appears "shoplike," informal with students holding a degree of autonomy over their work space. The teacher consults rather than supervises.	The class atmosphere is formal and autocratic stressing close supervision of student work by the teacher.
The teacher tends to "halo" expectations and attitudes about students and their work. Students are viewed as trustworthy and predominantly self-motivated.	The teacher tends to hold negative expectations and attitudes about students and their work. teacher doubts student ability to be self-motivated.
Students see the class as "fun" and look forward to attending it.	Students see the class as a "dull, boring routine."
Teachers tend to be more humanistic, less coercive, in pupil control ideology and behavior.	Teachers tend to be more custodial, less humanistic, in pupil control ideology and behavior.
The teacher tends to be flexible in administering classroom rules and regulations.	The teacher rigidly enforces rules and exceptions are rare or non-existent.
The teacher is relaxed and confident and is likely to respond openly and in depth to student questions and even pursue the students' line of thought.	The teacher seems to be on guard at all times, defending his domain, responding briefly to tersely to student questions.
The teacher's dress is varied, casual, sometimes colorful and appears to be a nonverbal clue of openness and the valuing of individuality.	The teacher's dress is often uniform-like, unvaried and colorless. It tends to suggest standardization and impersonal relationships with students.
Students appear to move around freely either through "brinkmanship" patterns or through flexible classroom structure.	Student movement is restricted. Brinkmanship, long pencil-sharpening trips, yawning openly, feigned confusion over assignments, allows student movement.
Teacher displays a sense of humor, laughing, joking and badgering students; often calling students by nicknames.	Teacher remains expressionless, uses little humor and ignores the informal system of students.
The students seem to express empathy, not only for one another but for classroom activity. This sometimes results in students "acting out."	Emotional inhibition seems to be encouraged in the classroom. Student empathy with each other and classroom activity is at a minimum.
Student misbehavior is a low risk activity.	Student misbehavior is a high risk activity.

NOTE: This chart obtained from: Joseph W. Licata and Bob L. Johnson, "Research on Environmental Robustness: A Review and Synthesis" A.E.R.A. Invited Address (1989).

Appendix II

Selected Key STAR Indicators

The following is a listing of indicators from the STAR teacher assessment/evaluation instrument which were selected as important indices of a teacher's ability to promote and enhance all students' high engagement in learning. Criteria for selection of these indicators included the notion that in order for a teacher to successfully ensure high student engagement in learning tasks, the teacher must be monitoring students throughout the lesson and using learning time efficiently.

II.A.1 Learning activities begin promptly.
II.A.2 Expectations for maintaining and completing timelines for tasks are communicated to students.
II.A.6 Learning activities reasonably match the time allocated for learning.
*II.B.2 The teacher gives clear administrative directions for classroom routines **or** no directions are needed.*
II.B.3 Aids, materials and equipment are available and ready for use.
II.B.4 Routine tasks are dealt with in an efficient manner.
II.D.1 The teacher provides frequent changes in stimuli throughout the lesson to ensure learner attention and engagement in learning task(s).
III.A.4 Enthusiasm for teaching, learning and the subject being taught is communicated to students.
III.A.5 Comments, questions, examples, demonstrations and/or other contributions are sought from students throughout the lesson.
III.A.6 Considers, recognizes and/or comments on students' contributions.
III.A.7 Teacher's responses are sufficient to address students' questions and comments.
*III.A.8 Manages incorrect responses in a way that maintains students' dignity **or** there were no incorrect responses.*
*III.A.9 Shows patience, empathy or understanding for students who respond poorly or who have difficulty **or** no students have difficulty.*
III.A.10 The lesson is personalized for students.
*IV.A.1 Student attention is ensured before directions and explanations for learning activities are provided **or** students are attending.*
IV.A.5 Procedural directions necessary to implement learning tasks are clear and complete.
IV.A.6 Expectations about student engagement in learning tasks are communicated at the beginning of activities.
IV.A.7 Clearly communicates the challenge of learning task(s) to students as needed.
IV.A.8 Encourages all students to participate.
IV.A.9 Reviews past learning to ensure students' readiness for new learning as needed.
IV.A.10 As new ideas/concepts/activities are introduced, they are related to past and future learning.
IV.B.3 Uses two or more methods that enhance student interest and actively involve students in learning tasks.
IV.B.5 Methods and learning tasks used enhance mastery of learning objectives.
IV.C.4 The use of teaching aids broadens understandings and enhances learning.
IV.C.8 Use of learning materials broadens student understandings and enhances learning.
IV.D.1 Students are given opportunities to learn at more than one cognitive and/or performance level.
IV.D.5 Directions and explanations related to lesson content and/or learning tasks are effective.
IV.D.6 Essential elements of content knowledge or performance tasks are emphasized.
IV.D.7 Potential areas or points of difficulty are emphasized throughout the lesson.
IV.E.1 Associations are taught and used in learning.
IV.E.2 Involves students in developing concepts.

IV.E.3 Involves students in developing principles and/or rules.
IV.E.4 Encourages students to think of and recall examples from their own experiences.
IV.E.5 Encourages students to use mental imagery.
IV.E.6 Asks a variety of questions.
IV.E.7 Wait time is used to enhance student learning.
IV.E.8 Encourages critical analysis and/or problem solving.
IV.E.9 Encourages students to elaborate, extend or critique their own or other students' responses.
IV.E.10 Encourages creative thinking.
IV.E.11 Provides opportunities for the extension of learning to new contexts.
*IV.F.3 Bases for learner difficulties or misunderstandings are sought **or** no misunderstandings or difficulties occur.*
*IV.F.5 Attempts to elliminate misunderstanding are successful **or** no misunderstanding occurs.*
IV.G.1 Learning activities are implemented at an appropriate pace.
IV.G.2 Summarizes or reviews during the lesson to monitor/assess the pace of teaching and learning.
IV.G.3 Provides sufficient time for students to complete learning task(s).
IV.H.1 Monitors students' initial engagement in learning tasks.
IV.H.2 Monitors students' engagement during learning tasks.
IV.H.3 Monitors the completion of learning tasks.
IV.H.4 Solicits a range of responses from students for informal assessment purposes.
IV.H.5 A variety of levels of learning is assessed as appropriate.
*IV.H.6 Adjustments within the lesson are made as needed **or** no adjustments are necessary.*
IV.I.1 Provides specific feedback to students about responses which are adequate and inadequate.

Appendix III

Examples of Clustering of Supportive Field Data

for Metaphors Identified

M1

Teacher as

Taskmaster/Drill Sergeant

Description:

Observational notes containing evidence of the use of this teaching/learning empowerment metaphor by teachers consistently contained references to verbal and non-verbal behaviors and actions which teachers employed in their interactions with students emphasizing their interest in 'keeping students always on-task', 'driving' students to 'work harder' and making sure that students 'keep up the pace'. Teachers in the dataset who seem to subscribe to the use of the taskmaster/drill sergeant metaphor remind students often during learning activities of the need to 'get busy', 'keep working' and 'don't stop 'til you finish your assignments'. Occasionally, some teachers enlisting this kind of metaphor may even employ mild forms of verbal intimidation, sarcasm, demeaning comments and verbal put-downs of students as actual teaching techniques. In observational notes where this metaphor is pronounced, the teacher seems to continuously impel students on in a 'work-'til-you-drop' manner. The teacher acts as a relentless taskmaster. The students never seem to be able to do anything completely right for the teacher.

OBS# 0452: (Third Grade/Language Arts) (intensity rating - 3) Teacher comments to class during first activity: "Are you listening...or are you talking? C'mon, let's go... get busy." Later on during third activity to one student: "You need to get working...are you finished with everything...then why are you drawing - name on board!"

OBS# 0452: CLASSROOM ROBUSTNESS (intensity rating - 1) Observation notes point up that the teacher's presence in the class is seen by students as one of dominance. Student behaviors are generally characterized by acquiescence to teacher demands for continuous on-taskness. There is a notable absence of verbal interchanges between teacher and students. The students do not willingly engage in expressing themselves during the class. The students seem concerned principally with fulfilling the teacher's expectations for completing work assignments and staying on-task. Both the teacher and the students seem to view the learning activities as chores to be completed.

OBS# 0363: (Ninth Grade Science) (intensity rating - 3) Teacher and students are working with small gasoline engine. Teacher tells student (Joe) to write model number and type on piece of paper...(a moment later)..."Joe, I could have done it myself!" Teacher has to call out number for Joe. Later during lesson: Teacher: "I don't have time to fool with that, Nat!...Nat, you are always tardy!...Go get lunch tickets." Teacher in response to an individual student's question during learning activity: "Don't worry about it, just work".

OBS# 0363: CLASSROOM ROBUSTNESS (intensity rating - 1) In this set of fieldnotes there are few verbal interchanges between teacher and students. Teacher for the most part takes charge of the class in an autocratic manner, and the students are encouraged to '...get right to work' and '...get moving'. Teacher comments in one instance to a student: "Terry, be careful in here, you're like a bull in a china shop!"...(student makes no response). There is no indication in the fieldnotes of any real enthusiasm being displayed either by the teacher or encouraged in the students. The class appears to be routine-like and task-oriented, with the teacher assuming a supervisory demeanor. Teacher to student: "Put sponge back...don't you know how?"...later on to group of students: "Get off of that table...Get to work". In explaining grading to the class, teacher comments: "You'll get an 'A' if it's right, an 'F' if it isn't".

M2

Teacher as

Manager/Organizer/Routinizer

Description:

The teacher utilizing this metaphor in classroom interactions with students employs words/phrases and actions/behaviors which emphasize a particular interest in stressing efficiency in the setting up, coordinating and maintaining of all classroom activities. Observational notes contain evidence of teachers who structure specific, clearly defined timelines for the completion by students of procedural routines such as collecting materials, papers, taking roll, etc., as well as structuring timelines for the 'smooth flowing' and 'efficient completion' of learning tasks. Teachers employimg this metaphor communicate to students timelines for engaging in and completing learning activities and are persistent in reminding students throughout tasks of the need to 'keep on schedule with your work', 'don't get behind', 'get into our routine', and 'stay on track'.

OBS# 0150: (First Grade Reading) (intensity rating - 3) Teacher: "If you have any questions remember that you have to raise your hands...Do not get out of your seats...I'll be checking to make sure you are doing your work...let's start now". A little later on: "Students, let's make sure we're reading these questions silently, and filling in the blanks on the sheet from the workbook". To one student: "Johnny, you know you have to finish your workbook page before you get up and go to the reading table".

OBS# 0150: CLASSROOM ROBUSTNESS (intensity rating - 1) In the fieldnotes, teacher is often 'giving directions' to the class, informing the students about what '...the procedures are for the next activity', '...how I want this to be done', etc. The teacher's verbal directions and reminders about organizational routines come up often in the class. There is some student misbehavior evident from the fieldnotes: 'Three students finish their sheets and are talking among themselves...teacher has to tell them to stop...and moves towards them to go through their worksheets with them'. Teacher's instructions and directions to students dominate the notes, student-teacher interactions recorded in the notes were minimal.

OBS# 0146: (Third Grade Reading) (intensity rating - 2) Teacher: "You have your assignment...you know what you should be doing". Later on: "I expect everyone to be working...let's stay on target now...remember, I want everyone to finish". To class about activity assignment: "This is the way I want you to do this...pay attention to this".

OBS# 0146: CLASSROOM ROBUSTNESS (intensity rating - 2) Notes suggest that teacher 'supervises students' work closely' and formally structures their classroom activities. Teacher is involved in 'managing' student behavior in a rigid manner that does not allow for much student ineraction. Although there is some student movement in the class, students are not allowed to move freely from their desks during the lesson.

M3

Teacher as

Humorist

Description:

Observational notes highlighting the use of this metaphor point to teachers' interests in making students 'feel comfortable', keeping students 'happy' and 'at ease' during the lesson, and maintaining a 'light' and 'upbeat' classroom atmosphere. Teachers attempt to create this kind of atmosphere in several ways. Some teachers choose to begin their classes with a humorous anecdote, joke, or possibly a cartoon on an overhead designed to get the students 'caught up' in the 'spirit' of the lesson. Other teachers continuously during the lesson interpolate light 'off-the cuff' remarks both to the class and to individual students as they engage in various learning activities. These humorous comments and remarks can be seen as part of the teacher's desire to establish a warm, pleasant and friendly classroom environment in which students feel comfortable and at ease.

OBS# 0022: (Tenth Grade Agriculture II) (intensity rating - 1) Teacher is friendly and jovial, especially at the beginning of the lesson. At the beginning of the first activity (whole class lecture/discussion on cow reproductive system) teacher digresses and tells and 'old 'ag' story' to class. Teacher occasionally 'quips' with students as the activities proceed: "Pretty neat, uh?"..."Any questions about this bull?".

OBS# 0022: CLASSROOM ROBUSTNESS (intensity rating - 2) Fieldnotes indicate that students respond to teacher's humorous anecdote (old 'ag' story) with 'lot's of laughter'. Students seem to continue to want to engage in short verbal interchanges with the teacher and with each other as the lesson proceeds. Teacher does talk to students and call them by name: "Tommy, let's make sure the class get's that down"..."Billy, let's relate this to the agriculture industry and it's importance in today's market". The fieldnotes also suggest that the teacher engaged in behaviors associated with a 'taskmaster' and 'organizer' during this lesson.

OBS# 0346: (Ninth Grade Physical Science) (intensity rating - 1) Teacher begins class with humorous story: "Class, something happened on the way to school today...teacher then gets into telling a joke about traveling...students respond 'with general laughter'. Teacher during class activity makes remark to students: "Isn't this a fun lesson...I'm sure enjoying this...Is everyone really getting into this?" Teacher makes a couple more humorous asides as the lesson proceeds.

OBS# 0346: CLASSROOM ROBUSTNESS (intensity rating - 2) Students do seem to 'get into' the lesson at the beginning of the first activity. Fieldnotes for this observation also indicate that the teacher only employed this metaphor early on, and engaged in verbal and non-verbal behaviors associated with a 'taskmaster' and 'organizer' for most of the remaining part of the lesson.

M4

Teacher as

Supporter/Helper/Facilitator

Description:

In this metaphor, the teacher's verbal and non-verbal behaviors emphasize his/her efforts to 'assist' students in their work, to 'help' students 'get through the material' and to 'work with students' to help them 'get where you need to be'. Teachers in the fieldnotes studied employing this metaphor seem to believe that ideally, when learning is 'working' in the classroom, they should be in the background as resource persons to ensure that students have everything that they need and are getting the utmost out of their learning experiences. Teachers using this type of teaching/learning empowerment metaphor do not seem to exhibit a forceful, commanding 'active' teaching presence in the classroom, and do not 'take charge' of the teaching/learning environment.

With this metaphor, the teacher's role is a much more passive one, whereby the teacher constantly seeks to facilitate and ensure his/her students' achievement during the class. The teacher does this by walking around the classroom a good deal, individually engaging each student, asking them how they are doing with their work and checking for students' 'at-easeness' with the lesson. Teachers exhibiting the metaphor of 'supporter/helper/facilitator' do not utilize a lot of strong teacher-directed activities in their teaching methods (e.g., teacher lecturing, teacher-directed demonstrations, etc.). These kinds of teachers do, however, employ methods in which the students become the active performers and the teacher becomes more passive and assisting (e.g., students doing individual seatwork, students engaging in student-led small group discussions, etc.).

OBS# 0344: (Fourth Grade Math) (intensity rating - 2) Teacher: "Let's take out our math workbooks and work on our problems"...Here, let's work through these answers together". Fieldnotes: 'Teacher helped students with answers to problems...students working'...Later: 'Students went up to teacher to see if some of their answers were correct...Teacher helped students with their problems'.

OBS# 0344: CLASSROOM ROBUSTNESS (intensity rating - 3) Fieldnotes indicate that the teacher continuously 'assists students' during the learning activities and '...helps them with their problems'. Teacher seems to want to respond to and help students with their workbook problems and to make them feel that she is there for them.

OBS# 0135: (Second Grade Math) (intensity rating - 2) Teacher: 'Let's work on our fives...let me help you with this'. Teacher during the class 'demonstrates on board' as the students write down the math problems at their desks. Teacher: "Don't be upset if you have trouble, this is new to you...With practice and work you'll get it...Let's use our flash cards...We'll help each other'. Later: ~I'll give you a fun sheet for practice with 3's...Don't worry about not knowing [the answers]...I'll show you how to draw sets on the back to figure them out".

OBS# 0135: CLASSROOM ROBUSTNESS (intensity rating - 3) Notes on student responses and behaviors indicate that the students seem interested in engaging in the math activity. No instances in the fieldnotes of any student off-task behavior. Teacher does assume the role of leader and facilitator for the class, doing so in an open, helping and humanistic way that serves to involve students in the class activity.

M5

Teacher as

Monitor/Prober/Assessor

Description:

Teachers in the fieldnotes using this metaphor in their classroom behaviors and interactions with students are characteristically involved a good deal of the time during the lesson in 'checking up' on students' work, 'gauging' students' progress, and asking 'probing' questions to see if students are really understanding. Teachers who are monitors/probers/assessors engage in purposeful monitoring of students by encouraging them to participate and respond to questions as learning proceeds. These teachers then 'assess' their students' abilities to comprehend the material based on their answers as the lesson progresses. Observational notes indicate that teachers who use this metaphor as an integral part of their interactive strategies with students often use this monitoring of students' progress during the lesson as a basis for making adjustments in the pace of learning activities. These adjustments in learning pace can take the form of 'speeding up' the pace of the lesson because learners' responses and behaviors suggest that they are becoming bored and/or disinterested, 'slowing down' the pace because of teacher's identification of student confusion, or perhaps reteaching various segments of the lesson as a means of further clarifying for learners.

OBS# 0149: (Fifth Grade Spelling) (intensity rating - 3) Excerpts from observational notes: 'Teacher makes sure all students are prepared to work. Then students call out spelling words from their workbooks - words that come from the assignment. Teacher moves between students while they are calling words, checking every now and then to make sure students are keeping up'. During this time teacher asks: "Am I going to fast?" Some students respond: "...Yes". Teacher then moves between these students that had said 'yes' to make sure they are 'keeping up'.

OBS# 0149: CLASSROOM ROBUSTNESS (intensity rating - 5) The observational notes indicate that throughout the period '...all students are actively participating in the activities'. Students were observed to be '...very interested in exchanging their spelling papers with each other for checking and critiquing'. In another instance: Teacher states: '"Hughes, what do you think the noun, verb & adjective are [in this sentence]? [waits for response]...We know what the noun and verb are...don't we, class?...Someone doesn't sound sure"...Teacher then asks different students to respond to check their understanding.' At other times during the class, the notes point out that '...students were working together, getting help from each other'. These notes suggest that there was a good degree of spontaneous involvement and enthusiasm on the part of both the teacher and students in the learning activities. As the teacher easily seemed to be a dynamic, focal point of the class, this caused the students to want to become actively engaged in the learning tasks (spelling papers), and the notes indicate that they were enjoying working and helping each other as the teacher guided them. The teacher was actively involved in monitoring the students, and checking to see if they were comprehending and following successfully as the lesson progressed.

OBS# 0142: (Fifth Grade Math) (intensity rating - 3) Fieldnotes indicate that during this lesson the teacher often 'monitored and assisted students individually'. Example from notes: 'Teacher walked around...stopped to work with Frederick...Walked down row...stopped at each student's desk to check for understanding...Interacted with students one to one...clarifying...reteaching...probing for source of problems'. Later: Michael had problem...Teacher: "What are the factors?" (notes state that the teacher probed for misunderstanding...when the student reached the final step to problem, the student commented: "Oh...that's what the problem was".

OBS# 0142: CLASSROOM ROBUSTNESS (intensity rating - 4) Observer notes have repeated statements about how the teacher 'continuously monitored, assisted students individually', 'walking around, providing individual assistance to students'. There were no instances of student off-task behavior mentioned in the notes. The students seemed to express 'empathy' for the class math activities and were interested in receiving attention from the teacher. Students appeared to be actively engaged and willing to participate in learning tasks. Notes indicate that '...several students finished early...they came up to get sheet for early finishers'.

M6

Teacher as

Storyteller

Description:

In this type of teaching/learning empowerment metaphor the teacher seeks to actively engage all of the students in the learning activity by involving them in an ongoing 'creative story' or 'imaginative drama' related to the content of the lesson. As data from the fieldnotes suggest, the teacher who is using the metaphor 'storyteller' will seek to involve students by asking them to 'picture in your mind...', 'pretend for a moment...', 'try to imagine...', etc., in order to 'capture their interest' and get them to really 'put themselves into a situation' and a particular 'frame of reference'. For example, a teacher might choose to involve students in a creative discussion or debate on a topic such as the civil war, where students would imagine and think about the various political and social views of individuals on different sides of that historical conflict. Teachers using this metaphor as part of their interactive behaviors encourage students to make associations in their minds about events, places and concepts and to use their creative imaginations to enhance and broaden their understandings.

OBS# 0809: (Eleventh/Twelfth Grade American History) (intensity rating - 2) Notes indicate that teacher involves students in discussing the black civil rights movement in the sixties. Teacher asks students to '...pick different roles' and 'take sides' in the class discussion. The observer notes state that the 'more vocal' students choose parts right away (some students take roles of black leaders, white suppressionists, etc.). The classroom discussion is structured around a debate among students of the merits of conflicting views held by different personages and segments of the population during this historic time.

OBS# 0809: CLASSROOM ROBUSTNESS (intensity rating - 4) Observer fieldnotes state that students '...became engaged in discussion'. Students seemed '...interested in talking about' the various historical views brought out in the class, and participated freely in discussion. Student involvement in activity was apparent, and the discussion was '...lively and animated'. Notes indicate that students '...got into their parts' and were 'anxious to talk' and 'express their views'.

M7

Teacher as

Challenger/Motivator

Description:

Teachers in the fieldnotes studied using this metaphor in their interactions with students characteristically seek to 'incite' students to think critically about the learning material, to 'capture their interest' and 'involve' them in their lessons. Teachers who are concerned with challenging and motivating students during learning activities are constantly seeking to actively involve students throughout the lesson in learning. They engage students in higher order cognitive thinking by challenging them with a variety of probing, analytical and evaluative questions about the material, by motivating them to think creatively, by encouraging them to elaborate, extend and critique their own and each other's comments/suggestions/responses, and by actively involving the students themselves in the development of the concepts and principles associated with the lesson. Teachers employing this metaphor purposefully structure students' group and individual learning tasks in ways that encourage reflective thinking and critical analysis and problem solving. Teachers seeking to challenge students ask them to 'discuss' the concepts and principles of the lesson, to 'explore' alternative ways of 'approaching' and 'considering' questions and to 'negotiate' their own learning strategies and/or solutions to problems.

OBS# 0138: (Fifth Grade Math) (intensity rating - 3) Examples from fieldnotes of teacher questions to students during lesson: "Can I really do this and end up with this answer?...I want you to think about this...Are we finished, what can we do?...How can I be sure the answer is correct?...Can anyone think of a way we can check this?" Later: As a group activity, several students have placed their decimal problems with solutions on the chalkboard. Teacher encourages the class: "...let's look at these problems on the board"..."let's talk about them". "Let's work through these [problems] step by step...what do you think about these solutions?", etc.

OBS# 0138: CLASSROOM ROBUSTNESS (intensity rating - 5) Fieldnotes indicate that students are actively engaged in learning tasks throughout the class: 'students raising their hands...getting into discussion'...'students working problems...making comments'. Observer notes state that students '...really got involved' during discussion of student work on board. Students seemed interested in analyzing their peers' work...'many hands go up' (in response to teacher's questions, and to make comments). Observer recording of repeated verbal interchanges between teacher and students occurs frequently in the notes.

OBS# 0133: (Kindergarten Math) (intensity rating - 2) Fieldnotes contain instances of teacher comments to students: "We're going to do one [problem] on the board now...it's going to be a hard one...but I bet if you try, you will all be able to do it". Later on: "I want to be very proud of you all...these are some hard ones coming up". Teacher tells students during whole group activity: "Let's do these problems together...I'll write [them] on the board...you see if you can do the same thing on your paper".

OBS# 0133: CLASSROOM ROBUSTNESS (intensity rating - 4) Observer notes on student behaviors indicate that students were interested in '...working problems at their tables'. When the teacher called on individual students by name, these students gave answers to problems. These question-answer interchanges occurring several times in the notes suggest students were engaged in the learning activities. As the teacher called on different students, '...students responded with answers'...'students continued working at tables'. There were no recorded instances in the fieldnotes of student off-task behavior.

APPENDIX IV

TEACHING / LEARNING EMPOWERMENT METAPHOR CONTINUUM

TRANSFERENTIAL EMPOWERMENT

TRANSACTIONAL EMPOWERMENT